CLAIMS:

1. Coherent scatter computer tomography apparatus for examination of an object of interest, comprising: a source of radiation (4); a first radiation detector (15); and a second radiation detector (30); wherein the source of radiation generates a radiation beam adapted to penetrate the object of interest in a fan plane; wherein the first radiation detector is arranged opposite to the source of radiation in the fane plane; wherein the first radiation detector is arranged to detect a first radiation of the radiation beam transmitted through the object of interest; wherein the second radiation detector is arranged opposite to the source of radiation with an offset from the fan plane in a direction normal to the fan plane; wherein the second radiation detector is arranged to detect a second radiation of the radiation beam scattered from a location in the object of interest; wherein at the location, the radiation beam has a dimension in the direction normal to the fan plane; wherein a scatter angle between photons of the second radiation scattered at the location along the dimension from the radiation beam and the fan plane is constant.

2. The coherent scatter computer tomography apparatus of claim 1, wherein the radiation beam is focused at a focus point; wherein the focus point is at a distance from the source of radiation; and wherein the second radiation detector is arranged at the distance from the source of radiation.

3. The coherent scatter computer tomography apparatus of claim 1, further comprising: a collimator (9); wherein the collimator is arranged between the object of interest and the source of radiation; wherein the collimator is adapted to collimate the radiation beam such that it is focused at a focus point being at the same distance form the source of radiation as the second radiation detector.

4. The coherent scatter computer tomography apparatus of claim 3, wherein the collimator comprises a first plurality of high-Z material sheets and a second plurality of tapered plastic layers sandwiched between the first plurality of high-Z material sheets.

5. The coherent scatter computer tomography apparatus of claim 3, wherein the collimator comprises a first plurality of high-Z material sheets and a second plurality of plastic layers sandwiched between the first plurality of high-Z material sheets; wherein the focusing of the radiation beam at the focus point is performed by deforming the plastic layers by applying inhomogeneous mechanical pressure onto the collimator.

6. The coherent scatter computer tomography apparatus of claim 1, wherein each of the first and second detectors comprises a line of detector elements, each of these lines being arranged in parallel to the fan plane.

7. A method of examining an object of interest with a coherent scatter computer tomography apparatus, the method comprising the steps of: generating a radiation beam penetrating the object of interest in a fan plane; detecting a first radiation of the radiation beam transmitted through the object of interest; detecting a second radiation of the radiation beam scattered from a location in the object of interest; wherein the location has an offset from the fan plane in a direction normal to the fan plane; wherein at the location, the radiation beam has a dimension in the direction normal to the fan plane; wherein the radiation beam is generated such that a scatter angle between photons of the second radiation scattered at the location along the dimension from the radiation beam and the fan plane is constant.

8. The method of claim 7, further comprising the step of: collimating the radiation beam such that it is focused at a focus point having the same distance from a source of radiation as a point where the second radiation is detected.

9. A software program for controlling a computer tomography apparatus, wherein, when the software is executed on a processor of the computer tomography apparatus, the computer tomography apparatus performs the following operation: generating a radiation beam penetrating the object of interest in a fan plane; detecting a first radiation of the radiation beam transmitted through the object of interest; detecting a second radiation of the radiation beam scattered from a location in the object of interest; wherein the location has an offset from the fan plane in a direction normal to the fan plane; wherein at the location, the radiation beam has a dimension in the direction normal to the fan plane; wherein the radiation beam is generated such that a scatter angle between photons of the second radiation scattered at the location along the dimension from the radiation beam and the fan plane is constant.